

CLAIMS

What is claimed is:

1. A heat exchanger comprising;
an oil cooler including outer sidewalls and a pair of spaced fittings
5 carried by said outer sidewalls,
a tank including walls extending parallel to one another to define a
chamber and at least one open end for receiving said oil cooler,
a first of said walls defining a pair of spaced openings, and
a plurality of spaced guides carried by said tank in said chamber for
10 positioning said oil cooler in said tank,
each of said guides integrally formed with said walls for guiding said
oil cooler to pass through said open end and into said chamber and for aligning said
fittings with said openings and for holding said fittings into engagement with said first
wall about said openings.
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2. A heat exchanger according to claim 1 wherein said guides include a
plurality of spaced detents extending from a second of said walls toward said
openings for engaging a first of said outer sidewalls of said oil cooler.
- 20 3. A heat exchanger according to claim 2 wherein said guides include at
least one ramp positioned on said second wall between said open end and said detents
for receiving said oil cooler thereon and guiding said oil cooler onto said detents.

4. A heat exchanger according to claim 3 wherein said ramp includes a low end positioned adjacent said open end, a high end positioned adjacent said detents, and an inclined surface extending between said low and high ends and for receiving said first outer sidewall and for permitting sliding movement of said oil cooler from said low end to said high end and onto said detents.

5. A heat exchanger according to claim 1 wherein each of said fittings includes a peripheral edge and said guides include a pair of primary ridges extending parallel to the longitudinal axis of said tank, each of said primary ridges positioned adjacent a selected one of said openings and extending from said first wall into said chamber for engaging said peripheral edge of a selected one of said fittings to maintain said fitting in alignment with said opening.

6. A heat exchanger according to claim 2 wherein each of said fittings includes a peripheral edge and said guides include a pair of primary ridges extending parallel to the longitudinal axis of said tank, each of said primary ridges positioned adjacent a selected one of said openings and extending from said first wall into said chamber for engaging said peripheral edge of a selected one of said fittings to maintain said fitting in alignment with said opening.

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7. A heat exchanger according to claim 6 wherein said guides include a plurality of secondary ridges extending perpendicularly to the longitudinal axis of said tank from a third one of said walls toward said openings for receiving said oil cooler

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thereon and cooperating with said pair of primary ridges to maintain said fittings in alignment with said openings.

8. A heat exchanger according to claim 1 wherein said guides include an
5 end stop positioned on said first wall adjacent one of said openings opposite said open
end for abutting engagement with said oil cooler to thereby prevent continued
translation of said oil cooler through said chamber.

9. A heat exchanger according to claim 8 wherein each of said fittings
10 includes a peripheral side edge and said end stop extends perpendicularly to the
longitudinal axis of said tank between third and fourth ones of said walls for abutting
engagement with said peripheral edge of a selected one of said fittings.

10. A heat exchanger according to claim 1 wherein one of said walls
15 defines a plurality of spaced slots for permitting fluid flow into said chamber .

11. A heat exchanger comprising;

an oil cooler including first and second opposed outer sidewalls and a pair of spaced fittings carried by said first outer sidewall and extending away from said second outer sidewall,

5 a tank including walls extending parallel to one another to define first and second open ends and a chamber extending therebetween for receiving said oil cooler,

a first of said walls defining a pair of spaced openings,

a plurality of spaced detents integrally formed with a second of said
10 walls and extending toward said openings for engaging said first outer sidewall of said oil cooler,

a third one of said walls defining a plurality of spaced slots extending therethrough for permitting fluid flow into said chamber,

a pair of spaced ramps integrally formed with said second wall
15 between said first open end and said detents, each of said ramps extending parallel to the longitudinal axis of said tank and including a low end positioned adjacent said first open end, a high end positioned adjacent said detents, and an inclined surface extending between said low and high ends and for receiving said second outer sidewall to permit sliding movement of said oil cooler from said low end to said high
20 end and onto said detents,

a pair of primary ridges integrally formed with and extending from said first wall into said chamber parallel to the longitudinal axis of said tank, each of said primary ridges positioned adjacent a selected one of said openings for engaging a

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selected one of said fittings to align said fitting with said opening,

5 a plurality of secondary ridges integrally formed with a third one of said walls and extending perpendicularly to the longitudinal axis of said tank toward said openings for receiving said second outer sidewall of said oil cooler thereon and cooperating with said pair of primary ridges to maintain said fittings in alignment with said opening, and

10 an end stop integrally formed with said first wall adjacent said second open end for abutting engagement with a selected one of said fittings to prevent said oil cooler from traversing through said second open end and for cooperating with said pair of primary ridges, said secondary ridges and said detents to maintain said oil cooler in a stationary position within said chamber for urging said fittings into engagement with said first wall about said openings.